



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,456	10/15/2003	Krishnan Viswanathan	88-2056A	7796

24114 7590 11/23/2004

LYONDELL CHEMICAL COMPANY
3801 WEST CHESTER PIKE
NEWTOWN SQUARE, PA 19073

EXAMINER

KEYS, ROSALYND ANN

ART UNIT PAPER NUMBER

1621

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/686,456	Applicant(s) VISWANATHAN, KRISHNAN	
	Examiner Rosalynd Keys	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1621

DETAILED ACTION

Status of Claims

1. Claims 1-5 are pending.

Claims 1-5 are rejected.

Information Disclosure

2. In the oath/declaration filed October 15, 2003 the applicant acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in § 37 CFR 1.56. The applicant has disclosed in the specification and figure 1 details about the prior art. However, the applicant has not listed this reference in an information disclosure statement. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper."

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See

Art Unit: 1621

MPEP § 2172.01. The omitted steps are: removal of the second stream concentrate from the distillation tower, which corresponds to tower 9 of figure 2 and addition of the second stream concentrate to another distillation tower, which corresponds to distillation tower 30 of figure 3.

6. The claims are further indefinite because it is unclear that the material as disclosed in lines 9 and 11 is the composition that is left after the blend of dipropylene glycol and tripropylene glycol is removed from the initial mixture. In order to determine the content of the material one has to go to the specification and figures. However, one should be able to determine that the composition and the material are the same entity by reading the claims themselves, since the claims are required to particularly point out and distinctly claim the subject matter which the applicant regards as his invention. The claims can be clarified by either changing the word composition, in line 6 of claim 1, to the word material or by changing the word material, in lines 9 and 11 of claim 1, to the word composition.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1621

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants own admission in view of Gupta et al. (US 5,672,768) and further in view of Broussard et al. (US 3,989,740).

The applicants acknowledge on page 6 of the specification that the instant invention operates the same as the prior art up until tower 9 (see specification pages 4-7 and figures 1-3). The applicants state that this invention departs from the prior art in that it operates tower 9 in such a manner, known in the art, to effect a separate intermediate cut from this material, that cut being stream 20 of Figure 2. In accordance with this invention, stream 20, in essentially its entirety, is deliberately kept physically separate and is mixed with at least one aldehyde controlling additive 21. This produces the first final TPG product of this invention. This product is acrylate grade. It contains additive 21 and therefore has the lowest aldehyde content possible, if not essentially zero.

One having ordinary skill in the art at the time the invention was made would have found it obvious to add NaBH_4 to stream 11 of the prior art in order to further remove any of the aldehyde contained therein. The applicant has simply taken a stream that was already produced in the prior art and added NaBH_4 to it to further remove any aldehyde present therein. The applicant has done no more than what was already known in the art, i.e., to remove aldehyde from a polyalkylene glycol by adding NaBH_4 to it. The skilled artisan would have been motivated to remove aldehyde from stream 11 because aldehydes are known to impart a characteristic, intense aromatic odor to the polyether polyols (see column 1, lines 18-33 of Gupta et al.) The skilled artisan would have been

Art Unit: 1621

further motivated to add NaBH_4 to stream 11 of the prior art in order to produce a polyalkylene glycol suitable for use in making polyalkylene glycol acrylates as taught by Broussard et al. (See entire disclosure, in particular column 2, lines 3-13 of Broussard et al. US 3,989,740. wherein it is taught to add sodium borohydride to polyalkylene glycols to decompose peroxide impurities contained therein. The treated glycol may be used immediately or may be stored under conditions unfavorable to the formation of additional peroxide).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schlesinger et al. (US 2,683,721) teach reduction and hydrogenation of chemical compounds, including aldehydes, by reacting the chemical compound with an alkali metal borohydride (see entire disclosure).


Randall et al. (US 3,213,113) disclose removal of aldehydes from ethylene oxide (see entire disclosure).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M, R and F 3:00-8:00 pm and T-W 5:30-10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rosalyn Keys
Primary Examiner
Art Unit 1621

November 19, 2004